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Claims

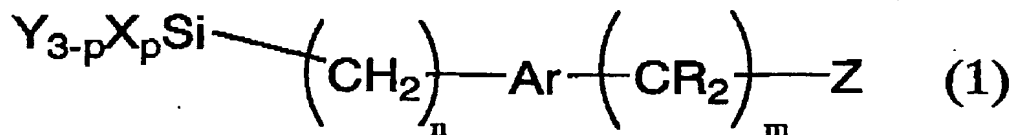
1. A method for manufacturing a molecular film pattern comprising:

a step of forming a molecular film by using a photolytic organic silicon compound that contains an aromatic hydrocarbon group, as a starting material; and a step of irradiating the molecular film with a light.

2. A method for manufacturing a molecular film pattern comprising:

a step of forming a molecular film by using an organic silicon compound as a starting material, the organic silicon compound having a chemical structure represented by the following formula (1); and a step of irradiating the molecular film with a light;

[Chemical 1]



wherein n, m, p, Ar, X, Y, and R in the formula are as follows:

n is an integer of 0 or more;

m is an integer of 0 or more;

p is an integer of 0 or more;

Ar is an aryl group;

R is a hydrogen atom or a fluorine atom;

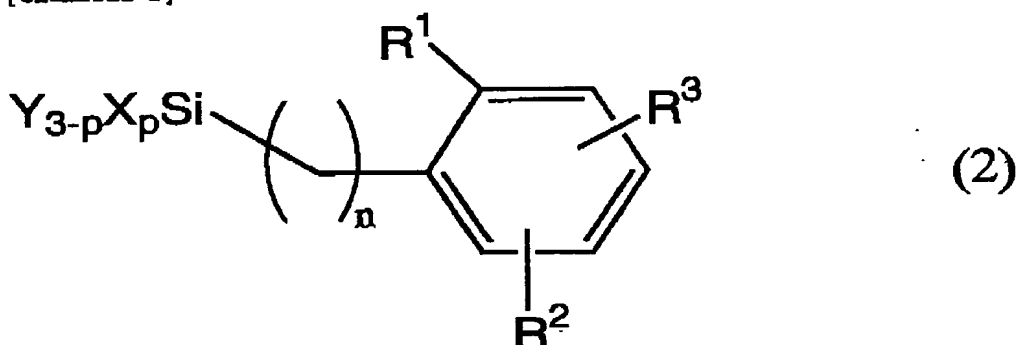
X is a halogen group such as a chlorine group, an amino group, or an alkoxyl group;

Y is an alkyl group, an aryl group, or a hydrogen atom; and

Z is an alkyl group, a perfluoroalkyl group, a silyl group, a cyano

3. A method for manufacturing a molecular film pattern comprising:

[Chemical 2]



n is an integer of 0 or more;

p is an integer of 0 or more;

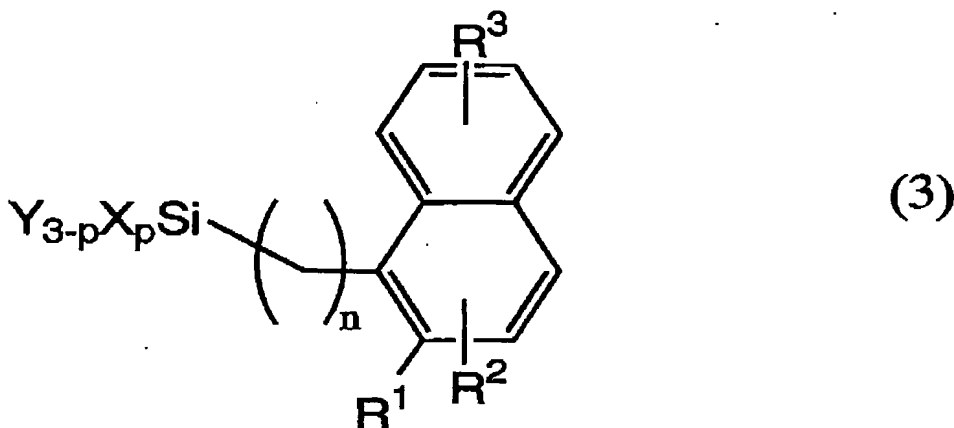
R^1 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxy group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, or an alkyl group containing an alkylamino group;

R^2 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxy group, an alkyl group containing a hydroxyl group, an alkyl

[Chemical 3]

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wherein n , p , R^1 , R^2 , R^3 , X , and Y in the formula are as follows:

n is an integer of 0 or more;

p is an integer of 0 or more;

R^1 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, or an alkyl group containing an alkylamino group;

R^2 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, an alkyl group containing an alkylamino group, an organic silicon group, or an alkyl group containing an organic silicon group;

R^3 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an

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alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, an alkyl group containing an alkylamino group, an organic silicon group, or an alkyl group containing an organic silicon group;

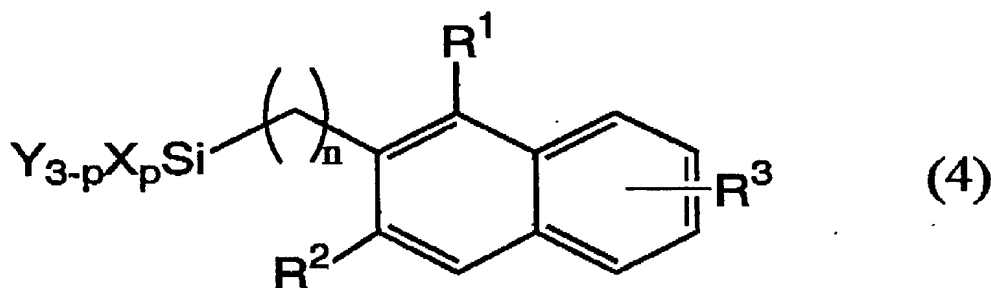
X is a halogen group such as a chlorine group, an amino group, or an alkoxyl group; and

Y is an alkyl group or an aryl group.

5. A method for manufacturing a molecular film pattern comprising:

a step of forming a molecular film by using an organic silicon compound as a starting material, the organic silicon compound having a chemical structure represented by the following formula (4); and a step of irradiating the molecular film with a light;

[Chemical 4]



wherein n , p , R^1 , R^2 , R^3 , X , and Y in the formula are as follows:

n is an integer of 0 or more;

p is an integer of 0 or more;

R^1 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl

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R^2 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxy group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, an alkyl group containing an alkylamino group, an organic silicon group, or an alkyl group containing an organic silicon group;

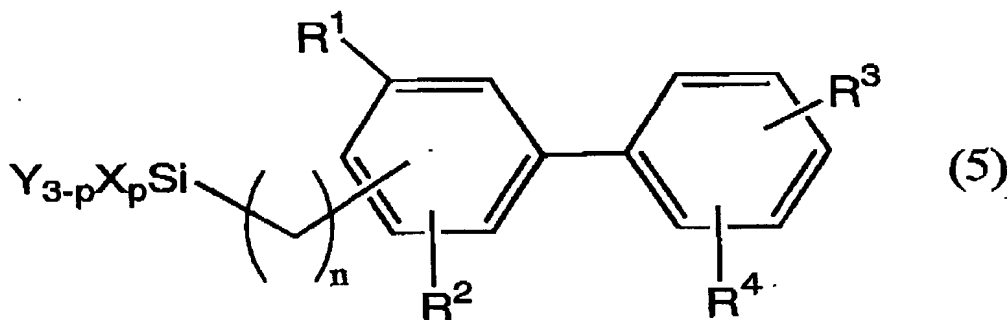
X is a halogen group such as a chlorine group, an amino group, or an alkoxy group; and

6. A method for manufacturing a molecular film pattern comprising:

[Chemical 5]

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wherein n , p , R^1 , R^2 , R^3 , R^4 , x , and Y in the formula are as follows:

n is an integer of 0 or more;

p is an integer of 0 or more;

R^1 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, or an alkyl group containing an alkylamino group;

R^2 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, an alkyl group containing an alkylamino group, an organic silicon group, or an alkyl group containing an organic silicon group;

R^3 is a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, an alkyl group

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containing an alkylamino group, an organic silicon group, or an alkyl group containing an organic silicon group;

R^4 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, an alkyl group containing an alkylamino group, an organic silicon group, or an alkyl group containing an organic silicon group;

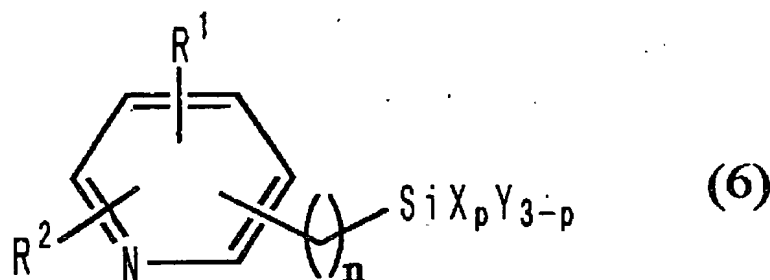
X is a halogen group such as a chlorine group, an amino group, or an alkoxyl group; and

Y is an alkyl group or an aryl group.

7. A method for manufacturing a molecular film pattern comprising:

a step of forming a molecular film by using an organic silicon compound as a starting material, the organic silicon compound having a chemical structure represented by the following formula (6); and a step of irradiating the molecular film with a light;

[Chemical 6]



wherein n, p, R^1 , R^2 , X, and Y in the formula are as follows:

n is an integer of 0 or more;

R^1 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxy group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, or an alkyl group containing an alkylamino group;

X is a halogen group such as a chlorine group, an amino group, or an alkoxyl group; and

8. A method for manufacturing a molecular film pattern comprising:

[Chemical 7]



Y is an alkyl group or an aryl group; and

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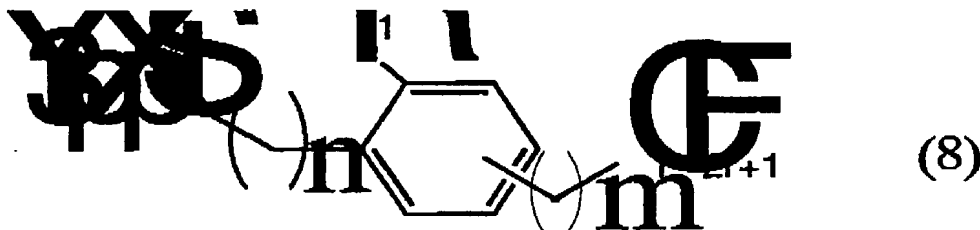
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Q is a nitrogen (N) atom, an oxygen (O) atom, or a sulfur (S) atom, each having a hydrogen atom or an alkyl group.

9. A method for manufacturing a molecular film pattern comprising:

a step of forming a molecular film by using an organic silicon compound as a starting material, the organic silicon compound having a chemical structure represented by the following formula (8); and a step of irradiating the molecular film with a light;

[Chemical 8].



wherein n , m , r , p , R^1 , X , and Y in the formula are as follows:

n is an integer of 0 or more;

m is an integer of 0 or more;

r is a positive integer;

p is an integer of 0 or more;

R^1 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, or an alkyl group containing an alkylamino group;

X is a halogen group such as a chlorine group, an amino group, or an alkoxyl group; and

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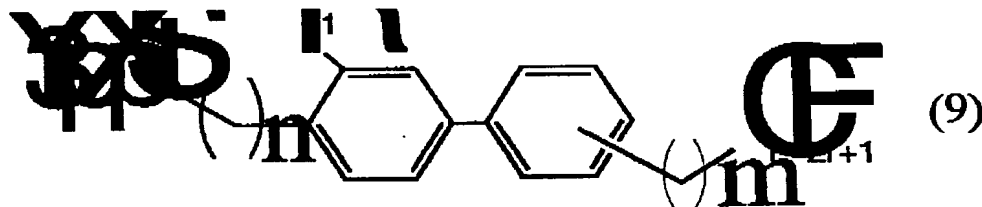
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Y is an alkyl group or an aryl group.

10. A method for manufacturing a molecular film pattern comprising:

a step of forming a molecular film by using an organic silicon compound as a starting material, the organic silicon compound having a chemical structure represented by the following formula (9); and a step of irradiating the molecular film with a light;

[Chemical 9]



wherein n, m, r, p, R¹, X, and Y in the formula are as follows:

n is an integer of 0 or more;

m is an integer of 0 or more;

r is a positive integer;

p is an integer of 0 or more;

R¹ is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxy group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, or an alkyl group containing an alkylamino group;

X is a halogen group such as a chlorine group, an amino group, or an alkoxy group; and

Y is an alkyl group or an aryl group.

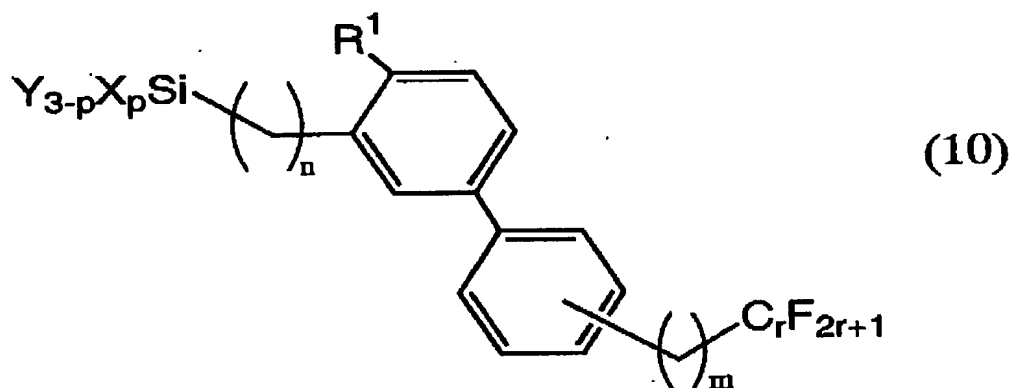
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11. A method for manufacturing a molecular film pattern comprising:

a step of forming a molecular film by using an organic silicon compound as a starting material, the organic silicon compound having a chemical structure represented by the following formula (10); and a step of irradiating the molecular film with a light;

[Chemical 10]



wherein n , m , r , p , R^1 , X , and Y in the formula are as follows:

n is an integer of 0 or more;

m is an integer of 0 or more;

r is a positive integer;

p is an integer of 0 or more;

R^1 is a hydrogen atom, a halogen atom, a perfluoroalkyl group, a hydroxyl group, a thiol group, an amino group, an alkylamino group, an alkoxyl group, an alkyl group containing a hydroxyl group, an alkyl group containing a thiol group, an alkyl group containing an amino group, or an alkyl group containing an alkylamino group;

Y is an alkyl group or an aryl group.

wherein R¹ of the organic silicon compound is a perfluoroalkyl group.

wherein R¹ of the organic silicon compound is a trifluoromethyl group.

wherein the thickness of the molecular film is 3 nm or less.

16. A method for manufacturing a semiconductor device comprising:

17. A semiconductor device formed by a method for manufacturing a semiconductor device according to Claim 16.

18. A method for manufacturing an electro-optical device comprising:
a step of forming a molecular film pattern according to a method
for manufacturing a molecular film pattern recited in one of Claims 1 to

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14.

19. An electro-optical device formed by a method for manufacturing an electro-optical device according to Claim 18.

20. A semiconductor device according to Claim 17,

wherein the semiconductor device comprises an area composed of an organic material.

21. An electro-optical device according to Claim 19,

wherein the electro-optical device comprises an organic electroluminescent element.

22. A method for manufacturing an electronic device comprising:

a step performed by using a method for manufacturing a molecular film pattern recited in one of Claims 1 to 14.

23. An electronic apparatus comprising an electro-optical device according to Claim 19 or 21 as a display portion.